ALBRECHT®

CB RADIO
AE 6199

OPERATING MANUAL

Index

Important note 3
Introduction 4
Accessories included 4
Safety Precautions 4
Front view 5
Rear view 5
Installation of the radio 6
Power supply 6
Antenna connection 7
Operation 8
- Switching on and adjusting volume and squelch 8
- Country switch setting 8
- Selecting the operating channel 9
- Adjusting squelch (muting) 9
- Automatic squelch ASQ 11
- AM / FM mode switch 10
- Select display colour 10
- Special interest channels 10
- Direct channel access to CH 9 and 19 11
- Scan mode 11
- Select display colour 11
- Transmitting and correct use of microphone 11

External sockets 12
- External loudspeaker 12
- Microphone socket 12

Service and Warranty information 12
Disposal and Recycling 13
Technical Details 14
Service contacts 14
Declaration of Conformity 16
Albrecht Radio Passport 16

Important Note

Your Albrecht AE 6199 corresponds to the latest European CB standards. It has a software country switching which allows selecting the operation mode according to the country, where you intend to use the radio. Please make sure that you use only the operation mode which is allowed in your country and according to your CB licence! **You may risk a penalty if authority members will find that you are operating in not allowed modes!**

During first use of this radio, your radio will start in the factory preselected 80 FM / 40 AM mode for sales in Germany (for sales in other countries the factory default start setting may be different) :

80/40 d	80 channels FM / 4 Watt, 40 channels AM / 4 Watt for Germany, Czech Republic and Slovak Republic (CH 1-40 and 70-80 FM only). You need no more any licence to operate the radio in this mode, but in certain German border regions CB base stations shall not transmit on channels 41 to 80 in FM, or they need a special license.
40/40 E	40 channels AM and FM for use in Europe except Austria, Malta, UK with 4 Watts in AM and FM
40/40 Po	40 channels AM and FM, both with 4 Watts and Poland frequency shift (-5 kHz) for use in Poland.
40+40 UK	40 channels UK band (27.60125 to 27.99125 MHz) and 40 european channels (like EC setting), both FM only
40 FM EC	40 channels FM / 4 Watt (former “CEPT” settings with 40 Channels FM according to EN 300 135-2). This mode can be used in all European countries (except Austria). See our latest issue of the “Radio Passport”.

Please note that radios with country switches are generally not allowed to be used in Austria. Please refer to official information of the local authorities before using the radio in other countries outside EU.

Introduction

Your new Albrecht CB Radio AE 6199, developed and manufactured in accordance with the latest CB regulations, offers you:

- Country switching
- Channel scan function
- Direct channel switching to CH 9 or 19 at radio
- LCD wide-angle display for channels and status
- 6-pin standard microphone socket, suitable also for amplifier microphones, selective calling systems
- Socket for external loudspeaker

Please read this operating manual through carefully. This will allow you to make use of all the functions your new CB Radio has to offer as soon as possible.

Accessories Included

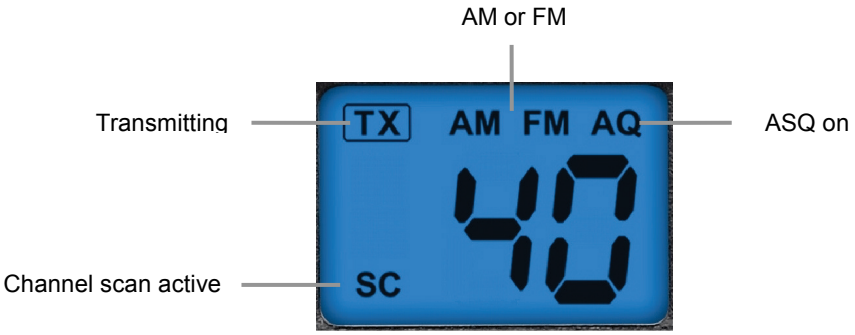
Your AE 6199 comes operational with the following accessories:

- Mobile mount
- Electret hand-held microphone with pre-amplifier
- Microphone hanger
- Various screws to fasten the radio and microphone fixing devices
- User manual with Radio Passport

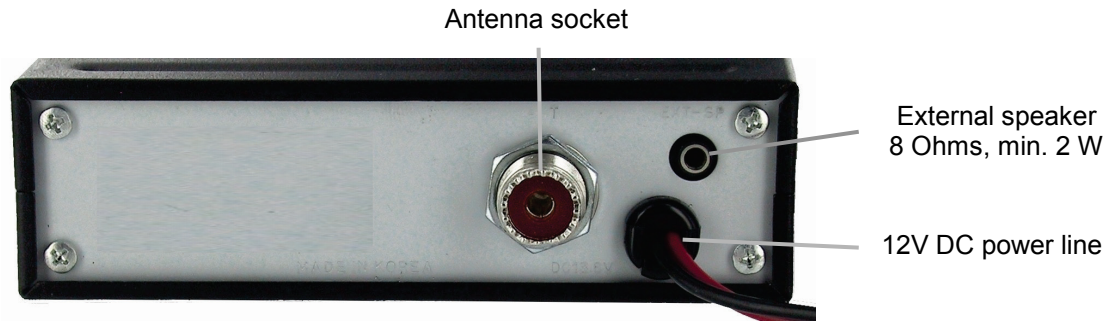
Safety Precautions

Users with pacemakers are recommended as a precaution to consult their doctor before operating the CB radio. Not all types of pacemakers are sufficiently protected from radiation from a nearby transmitter, so do not assume it is safe to start operation without checking! Please remember that you are in the immediate vicinity of a transmitting aerial, particularly when used as a mobile. If your doctor, or the manufacturer of the pacemaker, has recommended keeping a certain safe distance from the aerial, then please follow their instructions!
Do not transmit without connecting the aerial and never touch the aerial during transmission!
Please also take road safety into account! CB Radio can divert your attention from the road! Road safety is of course to be given priority! Therefore only use your ALBRECHT AE 6199 when the traffic situation enables it to be used safely.

Front View



Rear View



Installation of the Radio

You can either operate your ALBRECHT AE 6199 in the car or at home as a base station. For installation as a mobile station in the car, a mounting bracket is enclosed. Mount the set in such a way that it is not exposed to direct sunlight if possible, as this would lead to an increase in the temperature and can decrease the (set's) working life. The set should also not be installed near a heater. Mount the set in such a way that it is exposed to as little vibration as possible.
The mounting bracket should be attached to the dashboard, the tunnel slot or to any other suitable place using the enclosed tapping screws. Do not install the set in a place where it could cause injuries in the case of an accident (be careful to ensure free leg movement). Take care not to damage any underlying wires during installation!
Then insert the radio into the mounting bracket. Secure the set with the large knurled screws (using the enclosed washers) firmly at the required angle.
Also mount the microphone hanger using the enclosed screws in an easily-accessible place.
In order to prevent interference to the vehicle electronics from transmission in the vehicle, please make sure to take any mounting instructions from the vehicle manufacturer for radios and antennas into account.

Please note: European directives allow the car or truck manufacturers to decide, where, or even whether or not private radio transceivers may be operated in their cars, this is also valid for antenna installations. Please install Your mobile CB station only in accordance to car manufacturer's installation instructions.

Power Supply

Your AE 6199 receives power from the 2 pin fixed power cable.

The red and black wires in the cable are for the power supply. The cable has a looped-in fuse. Any new installed radio starts (may depend on the country of sales) on CH 9 AM in the German country setting (80/40), when it will be connected for the first time to 12 V power.

You can choose from two methods when connecting to the power supply (red and black):

Example 1
The radio should be able to be switched on and off at any time using the volume / on/off switch. The radio always keeps the last used settings in memory.

Connect up the red to the positive pole on the vehicle battery (or elsewhere in the vehicle's electrical system with permanent plus) or to a 12 volt power unit.

Connect up the black wire to the negative pole on the vehicle battery or the power unit or to a well-conductive part of the car body. (Not all body ground positions are good for radio communication- in most cases the battery Minus is the best connecting position)

Example 2
The set should be automatically be switched on and off with the ignition switch of the car. The radio will keep always the last used settings in memory, even at longer power disconnection.

Attach the red wire to a part of the vehicle electrical system which is interconnected to the ignition.

Connect the black wire to the negative pole on the battery or the vehicle body.

Note for all connecting methods:

For EMC reasons, the cable used to connect to the power supply should be no longer than 3 metres.
If you wish to operate your set at home from the mains supply then please only use a stabilised power supply with at least 3 amps permanent current capacity. Under no circumstances should you use a car battery charger, as these are not stabilised and during open circuit reach such high voltage levels that your radio set could be destroyed.

Never repair a blown fuse with silver paper or with aluminium foil! If the fuses keep blowing, then please give your radio set to your servicing dealer to be repaired or hand it in to an authorized service station.

The maximum allowed voltage variation for this radio is from 10.8 volts up to 15.6 volts. Never exceed the upper voltage limit under no circumstances!

Antenna Connection

Connect your CB antenna to the antenna socket on the rear side of your ALBRECHT AE 6199. Most CB antennas must be tuned to best radiation during installation to give highest effective communication range. CB specialists do that job with a standing wave (SWR) meter to check and adjust the aerial. Tune the antenna to the best standing wave ratio (SWR) on a medium channel number e.g. using Channel 1 in 80/40 mode (26.965 MHz) or Channel 20 (27.205 MHz) in all other modes. Truckers should prefer CH 9 for optimum alignment.

On this channel you should obtain a SWR of approx. 1.5 or less (the best possible value is 1.0). If the SWR deteriorates on the highest (Channel 40) and lowest (Channel 41) channels up to a value of 2.5, then your aerial is still acceptable. SWR above 3 is too bad for good communication range. A bad SWR may also indicate that there is perhaps an installation error or missing ground. Problems may be caused through missing ground, especially in boats and motor homes with fiber glass body. For these cases, Albrecht offers a special connecting cable with matching box as “artificial ground” (AKM 27), or ground less antennas like GL 27.

Some antennas, like “Gamma II” are broadbanded and do not need any retuning during installations.

Even if your AE 6199 is a heavy duty transceiver with a high-level output stage which can even withstand mismatching of SWR=3, you should still never transmit without an antenna!

Operation

Switching on and adjusting volume and squelch
The on/off switch is combined in the ***VR*** control. To switch on:

- Turn ***VR*** control from OFF position slightly right. LCD will be illuminated.
- Turn SQ control to the leftmost position. Then carefully turn right until the ASQ icon on the LCD disappears. Now the background noise should be audible.
- Then adjust the volume to the desired level.
- Finally turn the squelch clockwise until the background noise just stops or turn it fully counter clockwise to engage the automatic squelch ASQ

Selecting the correct country code

The AE 6199 has five user selectable country settings, which determine the channel count and the useable modulation mode. The factory default setting and the starting country setting (after connecting to Power) can vary depending on the sales country of this radio. Standard setting is the country code 'd'.

Procedure to switch the country code:

- Switch the radio **off**
- Press **A/F** button (AM/FM) and keep button pressed
- Switch **on** the radio at the same time
- **Release** the button
- Now you can **select** the country setting between ***d, EC, Po, UK*** and ***E*** with the **UP/DN** buttons**.**
- To verify your selection, turn the radio off and on again. The radio automatically returns to the selected operation mode.

Country codes und usage:

E 40 channels AM and FM 4 W
This setting is the European standard AM/FM system which allows 40 channels in AM and 40 Channels in FM as well. When this manual was issued, this system was allowed in **BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GR, HR, HU, IE, IS, IT, LI, LU, LT, LV, MC, NL, NO, PL , PT, RO, SE, SL, SK and SM.**

d 80 channels FM 4 W, 40 channels AM 4 W
This position is only allowed to be used in **Germany, Czech and Slovak Republic**, because no other European country provides the German 80 FM channels. (Note: In Slovak Republic use only CH 1-40 and 70-80 in FM)
No individual licence is necessary, but restrictions are still in force ***for base stations*** in certain German border regions, where transmitting on channels 41 – 80 is not allowed or only with a special licence.

EC 40 channels FM only 4W
This is former "CEPT" mode, the programming which is allowed in most countries (except Austria). Since AM is not allowed in this mode, the A/F key is disabled.

Po 40 channels AM and FM 4W
In Poland, it is allowed to use the European system ***E*** and the former established Poland channel system ***Po*** as well. The Poland channels are all 5 kHz shifted below the international channels.
Please note that it is not allowed to use the ***Po*** setting in other countries.

UK 40 channels + 40 UK channels FM only 4W
If this mode is active, the A/F button has an alternate function and toggles between the two channel lists. The new selected channel list is shown on the LCD for a short time.
UK : UK channels 1 – 40
EU: standard channels 1 - 40
This mode is only allowed in UK

If necessary you can switch to this system any time by the above mentioned procedure.
The country setting remains in memory until you will select another country setting later.

In Austria, the authorities do not allow the use of any CB radios which have a country switch. If you should travel through Austria, you are allowed to leave the radio in your car or truck, but you must keep this radio switched off when driving through Austria.

Please read carefully the "Radio Passport" in the last chapter of this manual before reprogramming the unit. Take your home country's licence with you when travelling abroad and using 40/40 or 80/40 mode.

Selecting the operating channel

- With Up or Down buttons on the radio you can continuously select channels. The present channel is displayed.
- Press the respective button longer to run up or down through the channels. The present channel is displayed.

Adjusting squelch (muting)

Particularly in FM, noise can be a nuisance on a free channel. With the muting control (**SQ**, Squelch) you can suppress this noise - but also signals which are too weak to be received properly.

This is how to adjust the signal strength required to switch on the loudspeaker, using the **SQ** control knob:

The further the control knob is turned to the right, the stronger a signal has to be in order to be audible through the loudspeaker.

In order to adjust the set to be the most sensitive to incoming signals, switch to a free channel:

- Use the **UP** / **DN** switches to find a free channel, where no signal is displayed.
- Then turn the squelch control **SQ** carefully to the right until the noise just about disappears.

Now the loudspeaker stays off when on a free channel but it switches back on when receiving even very weak signals.

The muting adjustment is particularly important during channel scanning. In this mode the point to which the set is adjusted decides whether scanning is stopped at the signal or not. Therefore you should test the various muting settings for various signal strengths and get to know this function.

Automatic squelch ASQ
Turning the SQ control knob to the leftmost position enables the ASQ.
When this function is activated the ASQ icon is shown on the LCD.
This automatic squelch function does not need any adjustment and works fully automatic at maximum sensitivity. It opens at any signal which is good enough to be understood. However, the ASQ function is limited to normal receiving conditions on the CB band. In case of nuisance by overreaching far distant stations or if you like to suppress weaker stations, it may be better to use the standard squelch instead of the ASQ.

AM / FM mode switch
AM or FM modulation can be selected by pressing AM/FM button.
The current setting is displayed on the LCD.
If the radio is switched to one of the channels 41 to 80 (mode d only), the device automatically switches into FM mode regardless of the setting on the lower channels. When switching back to channels 1 to 40 the AM mode is restored if it was selected before.
In mode UK the AM / FM key toggles between the special UK channel list and the standard EU channel list. After each key press the current selection is shown on the LC Display for a short time.

Select display colour
Press the Display key to cycle through three different colours for the background illumination of the LCD.

Special interest channels
There are a few channels which have been established for certain purposes:

Channel 1	Call channel in FM (Germany only)
Channel 9	**Call and emergency channel**, in Germany particularly this channel is also used by all truck drivers in AM. This means: a large number of stations are listening in. If the worst comes to the worst (e.g. in case of accident etc.) there is a good chance that someone will be listening.

To call other stations, who you know are listening in on channel 9, you can also use this channel. Call up the desired station on channel 9. As soon as contact has been made, agree on a free channel for your conversation and then channel 9 will be free again for other calls.

An emergency channel can of course only work if as many stations as possible are listening in. Therefore listen into this channel as often as possible!

Channel 16	Water sport channel
Channel 19	**Trucker channel** on AM in France, Spain and Italy
Channel 40	**Calling channel in Switzerland**

Some recommendations have been worked out by the CB clubs for the German channels 41 to 80. To find out which channels are suitable for special purposes, please get in touch with the respective groups or check in CB magazines.

Priority Channel 9 / 19
You can cycle with the button through CH 9, CH 19 and back again to the “normal” channel selected previously. Just press the button consecutively.

Scan mode
Your AE 6199 has an automatic channel scan, which can be used to observe all channels consecutively.
First choose the mode (AM or FM). Adjust the muting control to the point at which the receiver should open or turn the Squelch knob to the leftmost position to switch on the automatic squelch ASQ.

Start channel scan
- Briefly press the button **SC**
- Scan starts almost immediately by scanning all the channels upwards and the SC icon will appear on the LCD.
- Scanning is stopped at each signal worth receiving and you can listen into the conversation.

Without any action the scanning will resume a) after the communication on the channels has stopped or b) after about 5 seconds observation time, if the communication should last longer.

Stop channel scan
- You can stop the scan at any time by pressing the **SC** button a second time.
- Pressing the transmission button will also automatically stop the scan modus.

Transmitting and correct use of microphone
With the transmission button (**P**ush **T**o **T**alk) on the side of the microphone you can switch between receiving and transmitting:

- Press **PTT** button to transmit.
  The TX icon is shown on the LCD during transmission
- Release **PTT** button again to switch back to receiving.

When the transmission PTT button is pressed, you can speak from a distance of about 5-10 cm into the microphone. After pressing the **PTT** button, please wait about ½ second before you start speaking. Please remember - that different from GSM phones - you share one channel common for transmit and receive, and your

transmitter and the receiver(s) on the distant side need a certain time to switch on. The modulation amplifier of your AE 6199 is sensitive enough and enables you in most cases to speak with even more distance, depending on how loud your voice is. An automatic regulator ensures that your partner always hears your signal at the same volume.

It is recommended to test the best distance from the microphone for yourself with the help of another station.

External sockets

External loudspeaker
Depending on the surrounding noise, it can be advisable to connect an external loudspeaker. Usual commercial radio loudspeakers with 4-8 ohms impedance and 2-4 W minimum output can be plugged in.
The cable can be up to 3 metres long. For car loudspeakers, make sure to use a two-pin 3.5 mm jack plug and ensure that none of the loudspeaker connections are attached to the vehicle chassis.

Microphone socket
Your AE 6199 has a 6 pin microphone socket on the front side. The socket has a special wiring at PIN 4 which may be different from simple replacement microphones.

Apart from the hand microphone included in the package, you can also connect other microphones, with or without preamplifier, or with or without selective calling devices. However, other type of microphones must be specially soldered to the 6 pin connector and do not allow UP or DOWN switching. Such other microphones must not use PIN 4 of the plug.

Service and Warranty information

Troubleshooting

Check at first the power supply and the fuse. A problem may be caused by the power supply, when the LCD isn't lighted after switching on. If the unit works in a strange way, disconnect the power supply cable (or take out the fuse from the holder), while the radio remains switched on, wait some time (minimum 10 seconds), and then reconnect power cord again.
Another method is to make a "Factory Default " reset. This reset may also reset the country switching and the last channel used- the radio just starts again like a brand new radio which had not yet been connected.

- Switch the radio off
- Press **Light** button and keep it pressed during **switching the radio on**
- Release button
- The display shows ***rS*** and after a short time the radio starts again on CH 9 AM

In most cases the functions of the radio will be restored now.

In case this does not solve the problem, please ask your dealer or consult our service hints in the Internet. If you should return the radio for repair, do not forget to describe the problem as exactly as possible.

European 2 years warranty

The distributor, dealer or retail shop where you bought the radio warrants to the original retail purchaser of this product that should this product or any part of it, under normal use and conditions, be proven defective in material or workmanship within 2 years from the date of original purchase, such defect(s) will be repaired or replaced with new or reconditioned product without charge for parts and repair labour. To obtain repair or replacement within the terms of this warranty, the product is to be delivered with proof of warranty coverage (e.g. a copy of your bill of sale), specification of defect(s), to the distributor, dealer or his authorised repair centre.
Liability for communications range of this product is disclaimed. The warranty does not apply to any product or part there of which, has suffered or been damaged through alteration, improper installation, mishandling, misuse, neglect, accident, or by removal or defacement of the factory serial number label(s). The warranty does not apply to accessory parts or problems caused through not authorised or not recommended accessories like other than the supplied microphone, external antennas, external power supplies and over voltage caused through external power supplies, lightning or over voltage defects via antenna or other cables, broken or damaged acrylic glass windows and cabinet parts.
Please contact the dealer or person where you have purchased the CB radio, or contact our repair service in Germany directly.

Where to find service hints and service documentation

The complete technical documentation is updated regularly. You can download the latest versions of user manuals, technical documents and conformity declaration, as well as service hints or FAQ's any time from our server under

http://www.service.alan-electronics.de

If you should have a problem, please have a look to the service hints or frequently asked questions (FAQ) before you send Your CB radio to the service centre. Please note that the acceptance of AM+FM in the different European countries has just started and may be subject to unpredictable changes. Our homepage will provide the latest information about using the radio.

Disposal and Recycling

This radio was manufactured low-emission according to the European WEEE directive. Please note that electronic and electric devices are not to be disposed of with the household waste; return these devices to collection points. Returning devices is free of charge for end users, since the industry is covering the disposal costs. By returning the device to a collection point you contribute to the recycling of valuable raw materials.
The crossed-trash bin symbol on the type label is intended as a reminder!

Technical Details

Microphone socket wiring

Pin 1	Mic audio
Pin 2	PTT-RX (on ground for receiving)
Pin 3	PTT-TX (on ground for transmit)
Pin 4	up and down keys
Pin 5	Ground
Pin 6	+ voltage for mic-power if needed

Transmitter

Frequency accuracy	better than +/- 300 Hz
Carrier power	4 Watt
Harmonics and spurious radiations	less than -54 dBm = 4 nW
Audio response	300 Hz to 3 kHz in AM/FM
Adjacent channel power	less than 20 µW
Microphon sensitivity	better than 3 mV
FM frequency deviation	less than 2.0 kHz
AM modulation degree	up to 90%
Modulated Signal distortion	less than 5 %
Current consumption	3 A maximum.

Receiver

Sensitivity FM	0.8 μV for 20 dB SINAD
Sensitivity AM	1.5 μV for 20 dB SINAD
Frequency response	300 Hz to 3 kHz
Adjacent channel selectivity	better than 60 dB (EN 300 135-1)
Audio output power	3 Watt to 8 Ohm load
Squelch sensitivity	0.2 µV to 1 mV
Current consumption	0.3 A nominal/1.2 A maximum

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Service-Download:	www.service.alan-electronics.de

Declaration of Conformity / Konformitätserklärung

We hereby declare that our product: / Wir erklären hiermit, dass unser Produkt

CB-Radio Albrecht AE 6199

satisfies all technical regulations applicable to the product within the scope of EU Council Directives, European Standards and national frequency applications:/ alle technischen Anforderungen im Geltungsbereich der EU Richtlinien, europäischer Normen und nationaler Frequenzanwendungen einhält:

73/23/EEC, 2004/108/EG and 99/5/EC
EN 300 433-2 V1.3.1
EN 301 489-1 V1.8.1, EN 301 489-13 V1.2.1,
EN 60 950-1: 2006 / AC: 2011

All essential radio test suites have been carried out. /
Alle für das Produkt vorgeschriebenen Funktestreihen wurden durchgeführt.

Alan Electronics GmbH
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This declaration is issued under our sole responsibility. Basing on not yet fully harmonised frequency applications, the CB radio may be used only in listed countries according to selected channel programming and according to the still existing national restrictions for AM + FM, if such should still apply.
Diese Erklärung wird unter unserer alleinigen Verantwortung abgegeben. Dieses Funkgerät darf wegen der noch nicht überall harmonisierten Frequenzanwendungen in AM + FM in einigen Ländern nur eingeschränkt oder gar nicht betrieben werden, entsprechend den noch geltenden nationalen Regelungen.

Alan Electronics GmbH declare, bajo su responsabilidat, que este aparato cumple con lo dispuesto en la Directiva 99/05/CE, del Parlamento Europeo y del Consejo de 9 de marzo de 1999, transpuesta a la legislacion espanola mediante el Real Decreto 1890/2000, de 20 de noviembre.

Point of contact/ Ansprechpartner: **Dipl.-Ing. Norbert Dau**
Place and date of issue:

Lütjensee, 12.12.2012

(Signature)
Dipl.-Ing. Norbert Dau
Alan Electronics GmbH

Diese Konformitätserklärung und der Albrecht Gerätepass werden regelmäßig aktualisiert und sind unter **www.service.alan-electronics.de** in der jeweils gültigen neuesten Version abrufbar.

Albrecht Radio Passport

For your AE 6199 the following **programming and Operation regulations** apply in countries applying R&TTE directive:

	80/40	40/40	40 FM	Remarks
Austria	×	×	✓	No radios with country switch allowed. Please ask your dealer for a special Austria version of the radio.
Belgium	×	✓	✓	
Bulgaria	×	✓	✓	
Croatia	×	✓	✓	
Cyprus	×	✓	✓	
Czech	✓	✓	✓	
Denmark	×	✓	✓	
Estonia	×	✓	✓	
Finland	×	✓	✓	
France	×	✓	✓	
Germany	✓	✓	✓	Base stations in vicinity of the borders (except CZ) need a license for the operation on channels 41-80.
Greece	×	✓	✓	
Hungary	×	✓	✓	
Iceland	×	✓	✓	
Ireland	×	✓	✓	
Italy	×	✓	✓	Registration for inhabitants required. Foreign Visitors
Latvia	×	✓	✓	
Liechtenstein	×	✓	✓	
Lithuania	×	✓	✓	
Luxembourg	×	✓	✓	
Malta	×	×	✓	
Monaco	×	✓	✓	
Netherlands	×	✓	✓	
Norway	×	✓	✓	
Poland	×	✓	✓	
Portugal	×	✓	✓	
Romania	×	✓	✓	
San Marino	×	✓	✓	
Slovakia	✓	✓	✓	In FM operation is only allowed on channels 1-40 and 70-80.
Slovenia	×	✓	✓	
Spain	×	✓	✓	Registration and regular fees for inhabitants
Sweden	×	✓	✓	
Switzerland	×	✓	✓	
United	×	×	✓	

Current state: December, 2012

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Europe-wide use if setting ***E*** according to the new **CEPT / ECC decision 11 (03) with 4 Watts AM and 4 Watts FM on 40 channels** is currently in some CEPT countries in national implementation phase. So this list is still subject to changes.